REMARKS

Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-29 are currently being prosecuted. The Examiner is respectfully requested to reconsider the rejections in view of the Amendments and Remarks as set forth hereinbelow.

Rejection Under 35 USC § 103

Claims 1-10, 12, 14-23, 25 and 27-29 stand rejected under 35 USC § 103 as being unpatentable over WO 01/39548 (Heed et al.) in view of US 6,760,447 (Nelson). Claims 11 and 24 stand rejected under 35 USC 103 as being unpatentable over Heed et al. and Nelson, as applied to claim 1 and further in view of US 6,590,983 (Kraemer). Claims 13 and 26 stand rejected under 35 USC 103 as being unpatentable over Heed et al. and Nelson, as applied to claim 1 and further in view of US 5,896,456 (Desper). These rejections are respectfully traversed.

The present invention relates to a combination of method steps as set forth in claims 1-13, a combination of elements as set forth in device claims 14-26 and a combination of system claims as set forth in claims 27-29 for processing an input audio stereo signal comprising two input signals for reproduction of a processed stereo signal in an audio stereo reproduction system. The method, device and system include at least one pair of loudspeaker elements. A left output signal is or is equivalent to the sum of the mid input signal and the side input signal. A right output signal is or is equivalent to the sum of the mid input signal and the side input signal phase shifted 180°. The method, device and system is characterized in that at least part of the side input signal or the mid input signal in the frequency range 4 kHz to 9 kHz is phase shifted at least 45° but no more than 135° relative to the other signal prior to or at the production of the left and right output signals.

As acknowledged by the Examiner on page 3, lines 3-8, the Heed et al. patent does not disclose the step or means wherein at least a part of the side input signal (S) or the mid input signal (M) in the frequency range 4 kHz-9 kHz is phase shifted at least 45° but no more than 135° relative to the other signal prior to or at the production of the left and right output signals.

The Examiner relies on Nelson et al. to render obvious the subject matter as set forth in the claims. Nelson et al. describes a sound reproduction system that aims to solve the problem of

conventional sound reproduction systems, wherein the stereo image is present at, in principle, one location only, and only a slight movement to either side from this preferred point has the result that the image breaks down completely. This rejection is respectfully traversed.

Nelson does not disclose the claimed limitation of the side input signal (S) or the mid input signal (M) in the frequency range 4 kHz-9 kHz being phase shifted at least 45° but no more than 135° relative to the other signal prior to or at the production of the left and right output signals. The Examiner refers to col. 21, lines 38-45 for this disclosure. However, these lines refer to Figure 18 which discloses the difference between the phase responses shown in Figure 17. That is, the disclosure relates to the phase differences between the *final* signals supplied to the loudspeaker elements, not the phase shift of the side input signal or mid input signal in the 4 kHz-9 kHz range performed *prior to* the production of the left and right output signal, as is claimed.

Not only does Nelson et al. not cure the deficiencies of Heed et al., but one of ordinary skill in the art would not combine the teachings of Nelson et al. with Heed et al. Heed et al. discloses that the centers of the loudspeaker elements are to be within one quarter of the shortest wavelength emitted by the elements or at least within 17 cm. According to Heed et al., the small angle span angle is not a drawback but an advantage of the system.

Nelson et al. discloses a system seeking to preserve a stereo image at more than just one location. Nelson et al. discusses the effect of a reduced angled spanned by the two speakers. However, Nelson discloses that the loudspeaker elements cannot be too close together in order to avoid undesired side effects (see col. 7, lines 32-51) and the disclosure is focused on a span above 5 degrees.

One of ordinary skill in the art would not modify Heed et al., which discloses a small span angle, with the teaching of Nelson because Nelson clearly teaches away from a system having a small span angle.

The Applicant respectfully submits that the Examiner's rejections based on 35 U.S.C. § 103 have been obviated. Reconsideration and withdrawal of the rejections are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Chris McDonald, Registration No. 41,533, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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